INTRODUCTION

All of the information that appears in this booklet was extracted from seven years of our monthly publication, the DIGNAN NEWSLETTER. Many of the formulas have never been published except in the DIGNAN NEWSLETTER. We've tried to select simple yet effective, useful formulas that have proven popular with our subscribers. We've eliminated most formulas that contained chemicals that are not easily acquired.

We suggest that you start with the simple formulas that contain readily available chemicals. After success, go on to the formulas that require chemicals that you may not have purchased. All of the formulas have been rearranged so that only ONE FORM OF EACH CHEMICAL IS REQUIRED, or the substitution required is indicated. The formulas cover a wide scope of both standard, every-day developing situations and fun-type darkroom experiments.

Most of the basic chemicals used in this booklet are available from any well-stocked photo store or by mail from Lauder Chemical or Porter's Camera Store. Write for a catalog:

Lauder Chemical	Porter's Camera Store
350 Peninsula Ave.	2208 College St. BOX 628
San Mateo, CA 94401	Cedar Falls, IA 50613

Some chemicals are also available in drug stores or grocery stores. It is a matter of knowing the correct chemical name and whether or not it may be diluted with other chemicals. In some cases a basic chemical is sold under one or more trade names. Read labels carefully.

To find a supplier in your town, check the yellow pages under chemical supplies. Also, check with your local high school or college chemistry teacher. Remember that most photographic chemicals are also used for other purposes. As an example, Hydroquinone is a photographic developing agent. It is also an antitoxin used in the plastic and rubber industry.

You will find some redundancy in this booklet which has not been edited out - The hope is that repetition will lead to reinforcement of important points.

Welcome to do-it-yourself photo compounding!

Have fun!

GUIDE LINES

PAUL R. FARBER

BETWEEN A ROCK AND A HARD PLACE

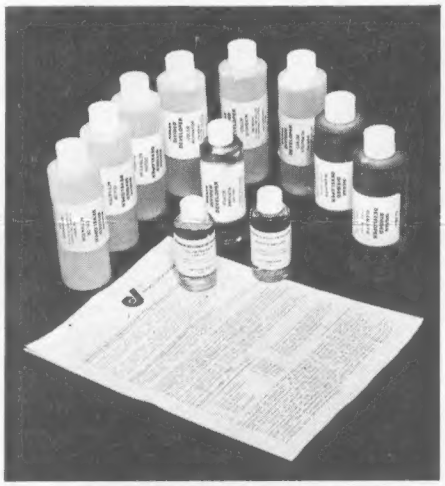
□ It was goodbye to the nonbiodegradable potassium ferricyanide bleach. It was goodbye to processing times that bordered on an hour's duration. It was goodbye to coarse-grained emulsions in favor of much finer grained emulsions. When first introduced, Kodak's sensationally new Type II color negative films were met with immediate and total acceptance by color printing enthusiasts. The radically new films also created an intense darkroom problem for those very same printing enthusiasts.

You see, with the introduction of the new films came a new chemistry, Kodak's process C-41. And with the C-41 process came the need for maintaining a *very* critical 100°F. processing temperature. Color printing enthusiasts had been caught between a rock and a hard place. Maintaining the critical 100°F. temperature just wasn't that easy. Water baths became a way of life, and a third arm would have been considered a darkroom necessity. One spent more time in preparation for the minutes-long process than was spent in total for the "outmoded" C-22 process.

Ingenious devices, such as Unicolor's Unidrum Film System (with its temperature-jacketed outer sleeve), made life easier. But one still had to raise the temperature of the solutions to the critical 100°F. temperature and then had to maintain the temperature for the duration of the process. In an ambient temperature of, say, 70°, the requirement was easier to say than to do.

Naturally, there were the inveterate experimenters who, unable to maintain the critical 100°F. temperature, believed they could beat the new system by lowering the temperature and extending the development time. To their eternal credit, they tried. However, the nature of the new Type II films is such that one can only anticipate perfect results if the 100°F. temperature is used. Lower temperatures and extended development only cause strange things to happen to the film curves, all of which conspire to produce color negatives from which less than perfect color prints will result.

Into this merry mess, enter one Patrick Dignan, president of Dignan Photographic, 12304 Erwin Street, North Hollywood, California 91606. As many of you may recall from a reference in this column several months ago, Dignan recently perfected and is marketing a divided color *print* system. In this system the exposed color print paper is first soaked in a color prebath and then transferred to a color activator, which completes the development process (this, of course, is followed by the usual secondary solutions).



Contents of Dignan's NCF-41 kit, seen above, can be used for divided development of Type II color negative films without the need for critical temperature control.

The beauty of Dignan's process, aside from the obvious savings to be realized by the reusability factor (the color prebath and color activator can be reused), is the fact that *temperature is not a critical factor!* Dignan then applied his secret process to another area, Type II color negative development, and came up with a working answer to the problem of high temperature processing, Dignan's process NCF-41.

It may sound ridiculous for a grown man to say that he has fallen in love with a developing process, but it's true. For the past few weeks I have been processing all of my Type II color negatives in Dignan's NCF-41 with perfect and repeatable results. And best of all, I have been able to circumvent the critical 100°F. requirement of the Kodak process. I now process all of my color negatives at the Dignan-recommended temperature of 75°F., a temperature that I can easily reach and maintain in my darkroom.

Initially, I must admit that I approached the idea of divided color negative development with a jaundiced eye. In particular, I wasn't too thrilled about the lower temperature of the NCF-41 process. I, too, had tried to develop my color negatives in the Kodak process at a lower temperature and had fallen victim to my own convictions about time and temperature processing. However, using Dignan's NCF-41 process completely reversed my feelings. My negatives were perfect and so were my prints.

Here's how NCF-41 works: the entire process consists of five chemical steps (with one wash cycle). The five chemical steps are: 1. *color prebath,* 2. *color activator,* 3. *stop bath,* 4. *bleach/fix* and 5. *stabilizer.* First, the exposed film is loaded into a conventional developing tank, and the color prebath, at 75°F., is poured in for three minutes. After three minutes (allowing for a 15-second drain time), the color prebath is poured out and the color activator is poured in for six minutes. After six minutes, the color activator is poured out and the stop bath is poured in for one minute. The stop bath is then poured out, and the bleach fix is poured in for an additional five minutes.

After the five-minute bleach/fix cycle, the bleach/fix is poured out and the tank opened and placed under running water for five minutes. The final step is to place the now-washed film into the stabilizer for one minute, whereupon the fully processed roll of color negative film is removed from the film reel and hung up to dry in a dust-free place. Total processing time for the NCF-41 process is 21 minutes.

In the Dignan NCF-41 process, the color prebath, bleach/fix and stabilizer are saved and reused for the total capacity of the processing kit. The color activator and stop bath are used once and discarded. Dignan supplies enough liquid concentrates to process 32 rolls of 36-exposure 35mm film or equivalent. The one-quart kit consists of one quart color prebath, two gallons color activator, one quart bleach/fix, two gallons color stop bath and one quart color stabilizer solution.

The cost for a one-quart kit is $13.80 (outside of continental United States add 10-percent service charge), and when this is broken down, it works out to a respectable 43¢ for each roll.

The low cost factor, coupled with the lack of critical temperature control requirements, plus predictable and repeatable results, have resulted in NCF-41 now being used in industrial and commercial labs, professional darkrooms and schools.

Once again, in case you missed the address, write to Dignan Photographic, 12304 Erwin Street, North Hollywood, California 91606. And while you're at it, inquire about Dignan's divided color print process. Both processes go together like rock and roll. □

Dignan Photographic Inc.

Dear Photographer:

If you ordered our "150 Popular Formula" book within the last few weeks, you should receive it shortly. All orders are filled within a few days of receipt and are mailed book rate.

If you requested our catalog and did not receive one, we are sorry, but we are in the process of making a number of changes here at Dignan Photographic. New information and prices of our divided color chemistry will be sent to you shortly.

For years our advertising pointed out that we could save photographers from 50 to 75% of their chemical cost. Well, we were successful at proving this point, but our claim was also self-defeating. A lab would succeed in compounding their own color solutions from our formulas and chemicals, and would then purchase their chemicals in large amounts from local suppliers, and we lost a customer.

So, about a year ago we turned our mail order chemical business over to Lauder Chemical. If you have not already received the Lauder catalog, please write to: Lauder Chemical, 350 Peninsula Ave., San Mateo, Calif. 94401.

If you received one of our previous catalogs, we may have lead you to believe that the Newsletter is only of value if you compound your own processing solutions. OVER 50% OF THOSE THAT SUBSCRIBE HAVE NEVER MIXED, NOR PLAN TO MIX THEIR OWN SOLUTIONS....Then why all the interest? Because they learn the similarity between the various brands of film and paper, both B/W and color. They learn what each solution does, whether it be negative, positive or reversal. They learn how to make short-cuts and how to substitute one manufacturers product for another. They learn that color processing is not the complex "mumbo-jumbo" that the emulsion manufacturers would like you to believe it is.

Of course, if you do plan to compound B/W or color, the Newsletter is almost indispensable. The best example we can offer is from a recent letter we received from South America. The writer evidently wanted to set up a color processing lab. He had combed through many photographic technical journals and prepared a list of about 100 chemicals that he wanted to purchase. OVER ONE-THIRD OF HIS CHEMICAL LIST WAS CODE OR TRADE NAMES USED BY THE MANUFACTURERS. OUR WRITER HAD DUPLICATED FULLY ONE-THIRD OF THE CHEMICALS THAT HE WANTED TO ORDER.

(over)

Research / Development / Sales / 12304 Erwin Street / North Hollywood, California 91606 / Phone 762 9075

So, to a great extent, this is what the Newsletter is all about. We try to remove the magic and replace it with facts. We do not claim to know everything there is to know about processing and we never will, but in eight years, we've covered a lot of ground.

If you have purchased some of the Newsletter issues, this is your last chance to complete your file. WE ARE CLOSING OUT ALL BACK ISSUES OF THE DIGNAN NEWSLETTER AT GREATLY REDUCED PRICES....THE TOTAL FILE IS OVER 1750 PAGES WITHOUT ADVERTISING. We are enclosing a very brief index.

PLEASE USE THIS ORDER FORM TODAY WHILE IT IS ON YOUR MIND. THIS OFFER ENDS AUGUST 31, 1977.

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Send Complete Fourth Year ('71-'72)	7.95	( )
Send Complete Fifth Year (1973)	7.95	( )
Send Complete Sixth Year (1974)	7.95	( )
Send Complete Seventh Year (1975)	7.95	( )
Send Complete Eighth Year (1976)	15.95	( )
Send Ninth Year Beginning July 1977	12.00	( )

I AM ENCLOSING MY CHECK IN THE AMOUNT OF $_____TO COVER THE COST OF THE ABOVE ITEMS. OR, CHARGE TO MY BANKAMERICARD, VISA OR MASTER CHARGE.

#_____Exp. Date_____

Name_____Address_____

City_____State_____Zip_____

Calif. residents add 6% sales tax. Prices apply to U.S., Puerto Rico, APO and FPO. Canada and Mexico add 10% service charge. This offer is limited and the price subject to change.

DIGNAN PHOTOGRAPHIC, INC.
12304 ERWIN ST., NO. HOLLYWOOD, CALIF. 91606

INDEX OF MAJOR ARTICLES CONTAINED IN BACK ISSUES OF THE DIGNAN NEWSLETTER:

FIRST YEAR (Sept. 1968 to Aug. 1969) Contains over 280 pages.

OFFICIAL KODAK FORMULAS FOR: C-22, E-2, E-3, E-4, ME-4, also EASTMAN COLOR #5251 & #5254.
OFFICIAL GAF FORMULAS AR-1 and AR-2 FOR THE ANSCOCHROMES.
OFFICIAL GAF PRINTON FORMULAS.
OFFICIAL FERRANICOLOR DIA 28 FORMULAS.
UNOFFICIAL P-111 FORMULAS FOR EKTAPRINT R PAPER.
UNOFFICIAL CP-5 FORMULAS.
UNOFFICIAL FORMULAS FOR PROCESSING UNICOLOR B PAPER.
PLUS DOZENS OF B/W ARTICLES AND FORMULAS.

SECOND YEAR (Sept. 1969 to Aug. 1970) Contains over 240 pages.

OFFICIAL KODAK FORMULAS FOR INTER-NEG #6008, ALSO ECO-1 and ECO-2.
OFFICIAL KODAK KODACHROME K-12 FORMULAS.
OFFICIAL GAF D-500 AS COLOR NEGATIVE FORMULAS.
OFFICIAL FOMACOLOR PM PAPER FORMULAS.
OFFICIAL GEVACOLOR REVERSAL PROCESSING FORMULAS.
OFFICIAL DIGNAN COLOR PRINT FORMULAS (Paper same as Unicolor B).
SECRET FORMULAS OF MORTENSON REVEALED.
OFFICIAL ILFORD COLOR NEGATIVE FORMULAS.
PLUS MANY ARTICLES AND FORMULAS THAT WILL SAVE YOU TIME AND MONEY.

THIRD YEAR (Sept. 1970 to Aug. 1971) Contains over 177 pages.

OFFICIAL 3M COLOR PRINT FORMULAS.
OFFICIAL FORTECOLOR COLOR PRINT FORMULAS.
OFFICIAL AGFACOLOR FORMULAS CT-18 and CK-20 FILMS.
OFFICIAL AGFACOLOR NEGATIVE FORMULAS CN-17 and CN-17S.
SIMPLIFIED E-4 PROCESSING FORMULAS.
SIMPLIFIED BLACK & WHITE SLIDE PROCESSING FORMULAS.
UNIVERSAL FORMULAS FOR STABILIZATION PROCESSOR.
HOW TO DEVELOP COLOR PRINTS IN ROOM LIGHT.
PLUS: FORMULAS FOR POWDERED STOP BATH, SPRAY PROCESSING, EDWAL B/W FORMULAS, ETC.

NEWSLETTER INDEX (Cont'd)

FOURTH YEAR (Sept. 1971 to Aug. 1972) Contains over 210 pages.

FORMULAS FOR GAF OR EKTACOLOR PAPER DRUM PROCESSING.
HARRY CHAMPLIN'S FINE GRAIN BLACK & WHITE FORMULAS.
GEOFFREY CRAWLEY'S FX-FORMULAS, FX-1 THROUGH FX-19.
OFFICIAL FORMULAS KODAK BLACK & WHITE REVERSAL FILMS.
EKTACHROME AS NEGATIVE WITH E.I. TO 1600.
OFFICIAL AGFACHROME 50S FORMULAS.
BUILD A SEMI-AUTOMATIC UNIVERSAL PROCESSING MACHINE.
HOW TO MAKE A NO COST COLOR MATRIX.
FORMULAS FOR NEW 11½ MINUTE C-22 PROCESS.
PLUS: MANY EYE-OPENING ARTICLES

FIFTH YEAR (Jan. 1973 to Dec. 1973) Contains over 200 pages.

OFFICIAL KODAK EKTACOLOR 3 SOLUTION PROCESSING.
46 PAGES OF FACTS & FORMULAS REMOVES THE MYSTERY CONCERNING MOST COLOR AND B/W CHEMICALS USED TODAY.
PROCESSING #5254 SO COLOR RESPONSE IS IN "DAYLIGHT AREA".
SIMPLE MACHINE FOR REMOVING REM BACKING FROM #5254.
SIMPLIFIED FORMULAS FOR RC 37 PAPER.
30 DIFFERENT B/W PHENIDONE DEVELOPERS.
SUBSTITUTE FORMULAS FOR MICRODOL-X, DIAFINE, NEOFINE BLUE AND ACUFINE.
THE SECRET OF "PROOF-IT-OFF". MAKE YOUR OWN RC STAMP KIT OF THIS FORMER DIGNAN PRODUCT. ETC.

SIXTH YEAR (Jan. 1974 to Dec. 1974) Contains 180 pages.

OFFICIAL KODAK FORMULAS FOR PROCESSING #5247.
OFFICIAL KODAK FORMULAS P-111.
SEMI-OFFICIAL KODAK C-41 PROCESS.
GEHRET'S EKTACOLOR 37 RC FORMULAS FOR STOCK SOLUTIONS.
CHEMICAL & PHYSICAL EFFECTS FOR EKTACOLOR 30 & 37 RC PAPERS.
PROCESS EKTACHROME OR FUJICHROME IN 17 MINUTES.
FOUR SOLUTION PROCESSING OF EKTACOLOR PRINT FILM.
EXPERIMENTAL HOT PROCESSING EKTACHROME AT 150°F.

NEWSLETTER INDEX (Cont'd)

SEVENTH YEAR (Jan. 1975 to Dec. 1975) Contains over 190 pages.

OFFICIAL ANSCO (GAF) PROCESSING - 30 MINUTES AT 75°F.
OFFICIAL KODAK ECP-2 PROCESSING COLOR PRINT FILMS.
OFFICIAL KODAK FORMULAS KODACHROME K-14.
FORMULAS FOR PROCESSING AGFACHROME REVERSAL 50S/50L.
12 FORMULAS OF MICRO-FILM.
OFFICIAL KODAK FORMULAS VNF-1 FOR NEW EKTACHROMES.
HOW TO PROCESS 85 DIFFERENT BRANDS OF COLOR NEGATIVES.
FORMULA FOR PUSHING TRI-X TO E.I. 2500.
OFFICIAL AGFACOLOR FORMULAS CNS NEGATIVE.
SIMPLIFIED E-4 FORMULAS AT 85°F IN 18 MINUTES.
ETC., ETC., ETC.

EIGHTH YEAR (Jan. 1976 to Dec. 1976) Contains 140 pages.

OFFICIAL AGFA FORMULAS FOR PROCESSING THE AGFACHROMES.
OFFICIAL FORMULA FOR VICTOR FINE GRAIN INTENSIFIER.
HOW TO MAKE AN INEXPENSIVE SUPER CONCENTRATED HYPO ELIMINATOR.
FORMULAS FOR COMPOUNDING CIBACHROME CHEMISTRY.
GEHRET'S FORMULAS FOR PROCESSING AGFA PE TYPE 4 COLOR PRINT PAPER.
E-6 PROCESSING CHANGES TO CHANGE COLOR BALANCE.
NEW COLOR PRINT DEVELOPER WITH LONG LIFE AND RAPID PROCESSING.
FORMULA YOU CAN COMPOUND FOR PUSHING KODACHROMES.
FORMULAS FOR PROCESSING E-6 EKTACHROMES.
HOW TO FORMULATE THE NEW DIGNAN DIVIDED PRINT SYSTEM.
PLUS MANY MORE INTERESTING ARTICLES.

NINTH YEAR (July 1977 to July 1978)

THE DIGNAN NEWSLETTER was discontinued with the last issue of 1976. Starting in July 1977 a new monthly publication called the DIGNAN PHOTOGRAPHIC REPORT will replace the Newsletter.

A FEW COMMENTS FROM NEWSLETTER SUBSCRIBERS:

"The information you provide is invaluable. Keep up the good work. It is most refreshing to be able to read your Newsletter without having to turn over page after page of advertising. I and my friends are pleased to pay the subscription rate to support the type of service your Newsletter is providing".

"I believe the Newsletter is my best source of information. Being retired and a nut on photography, I find lots of challengers in its pages."

"I must let you know that the results of your C-22 chemistry, along with the Chemtirx pH Meter, are great! Best printing negatives I ever had. You have started me on a most enjoyable and rewarding phase of photography".

"So far each issue and past articles have contained new information which is of benefit to me as well as helping to open a small window in the large company confusion."

"I have learned more by doing than reading. I have also learned to get my own problems solved by small tidbits throughout the Newsletter. I have never seen a Daguerreotype and was puzzled at first by the negative appearance. Only in the Newsletter did I find out that a Daguerreotype is a negative and becomes a positive when viewed at an oblique angle. No one else made mention of this. Problem solved".

"Thank you for continuing to publish the Newsletter, without it, I may have given up darkroom work."

"You have done an excellent job in supplying photographic processing formulas and information. The cost of the Newsletter is offset many times by savings resulting from not having to buy expensive processing kits. For a professional or anyone doing a large volume of processing, the savings would be even more significant. Just keep up the good work and keep the Newsletters coming".

"Very worthwhile reading. Serves a useful purpose overlooked too often in the other publications."

"Want you to know that the B/W stabilization formulas you published (by Reichner) seem to work as will as any of the major brands I've tried which include Kodak, Ilford and Agfa solutions. Since I keep records of my B/W printing, it is easy for me to set-up to duplicate exposures previously made, and thus check formulas for comparative emulsion speeds, etc.".

"I find that your Newsletter gives me a great deal of information on the whys and wherefores of color film, color chemistry and color processing."

PREFACE

There have been many important changes in the manufacture of color emulsions during the last few years.

Besides increased speed, finer grain and purer color rendering, the gelatin has been modified, so that most of the newer emulsions supplied today are "prehardened", thus allowing higher processing temperatures to be used.

These newer type "prehardened" emulsions have eliminated the need for a number of solutions and chemicals; gone are the prehardener and neutralizer solutions needed with E-4 Ektachromes. Chemicals such as sodium sulfate, potassium alum, etc., are no longer needed.

You will, therefore, find that with about 35 basic chemicals you can compound solutions to process all of the newer type emulsions.

WHERE TO PURCHASE CHEMICALS

All large photographic stores can supply most of the common basic chemicals that are used to compound black & white solutions, most of which are also used to compound color solutions. However, photo stores usually do not supply the more exotic "color developing agents", color accelerators, etc.

The following mail order companies supply all of the necessary chemicals in small amounts. Write for their catalogs:

Lauder Chemical Co. 350 Peninsula Ave. San Mateo, Ca. 94401	Porter's Camera Store P.O. Box 628 Cedar Falls, Ia. 50613	Zone V 291 Buckminster Rd. Brookline, Ma. 02146

The main object of this book is to present simplified formulas that can be used to replace the various chemical kits on the market. The only way to benefit from the information is to compound a set of solutions and compare the results against using the standard kits.

We think you will be pleasantly surprised.

* * *